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2.0 SITE 1 – CONSTRUCTION BATTALION UNIT DRUM STORAGE AREA

This five-year review is being conducted for Site 1 as a matter of policy since no hazardous substances remain in the soil OU that would limit use or restrict exposure, but the groundwater OU is still under investigation. The USEPA did not assign an OU number to this site.

2.1 HISTORY AND SITE CHRONOLOGY

A list of important Site 1 historical events and relevant dates in the site chronology is shown below. The identified events are illustrative, not comprehensive. It should be noted that there was no Proposed Plan or Public Meeting for the NFA decision document prepared for this site.

Event	Date
Twenty-six 55-gallon drums of waste oil, lube oil, and paint observed during site visit.	1982
Final IAS completed. Drums reportedly removed and disposed.	March 1983
Inspection of site reported two 55-gallon drums labeled engine oil at site.	October 1988
Drums removed.	Unknown
Phase I RI completed.	1992
Phase II RI draft final completed.	1996
NFA Decision Document completed.	September 1996
Phase II RI finalized.	March 1997
Installation of Site 2 landfill cap completed.	September 1997
Site 2 Groundwater Monitoring Program initiated.	1999
Draft Final Basewide Groundwater OU RI completed.	August 2001

2.2 BACKGROUND

The CBU Drum Storage Area was an unpaved area located in the northern section of NSB-NLON, adjacent to the deployed personnel parking lot and within the boundary of the Area A Landfill. Figure 2-1 provides the general arrangement of the previous site location. The previous site location with respect to other IR sites at NSB-NLON is shown on Figure 1-2. The site was situated on a flat, open area at the base of a wooded hillside that sloped to the northeast toward the site at a 25 percent grade. The site was approximately 15 feet in width by 30 feet in length.

Twenty-six 55-gallon drums of waste oil, lube oil, and paint materials were observed at the site during the 1982 IAS (Navy, 1983). Some of the drums were reportedly leaking at that time. The IAS report concluded that the site had not been used for several years. The site was inspected on October 20, 1988 and two 55-gallon drums labeled as engine oil were observed. No surface soil staining or stressed

vegetation was evident. The drums noted in the IAS report were reportedly removed and properly disposed by the Navy; the two drums observed in 1988 were subsequently removed.

Two remedial investigations, Phase I and Phase II, were conducted at Site 1. During the Phase II RI (B&RE, 1997a), it was determined that soil and groundwater samples collected in the vicinity of the site yielded relatively low concentrations of contaminants. Volatile organic compounds (VOCs) were detected in soil samples at concentrations less than or equal to 380 micrograms per kilograms (µg/kg). Only two VOCs (chlorobenzene and total xylenes) were detected in groundwater at concentrations of 12 and 24 micrograms per liter (µg/L), respectively. All semivolatile organics compounds (SVOCs) in groundwater were detected at concentrations less than or equal to 31 µg/L.

The human health risk assessment (B&RE, 1997a) concluded that calculated risks for the stated exposure scenario did not exceed the USEPA acceptable risk range for incremental cancer risk (ICR) (1.0E-04 to 1.0E-06). The evaluation of noncarcinogenic potential revealed that for the stated exposure scenarios, adverse effects were unlikely.

It was determined during the RI that the potential for this site to impact ecological receptors was low. Although the ERA (B&RE, 1997a) concluded that contaminants associated with this site could adversely impact terrestrial vegetation, soil invertebrates, and terrestrial vertebrates, the calculations were performed using highly conservative estimates. Furthermore, the site was relatively small in areal extent and was characterized by compacted soil that supports limited vegetation and terrestrial species. Therefore, Site 1 did not provide a significant habitat for ecological receptors.

2.3 REMEDIAL ACTIONS

2.3.1 Remedy Selection

The source of contamination discovered during the 1983 IAS (twenty-six 55-gallon drums containing waste oil, lube oil, and paint materials) were reportedly removed and disposed by the Navy, and no visual evidence of contamination remains at the site.

The site, which is located within the boundary of the Area A Landfill (Site 2), was covered with a low-permeability cap as part of the IRA for the Area A Landfill soil. This cap eliminated the possibility of potential human and ecological exposure to the soil at Site 1. Furthermore, the cap minimizes the amount of precipitation that could infiltrate through the soil and potentially transport contamination to the groundwater.

An NFA Decision Document was signed for Site 1 on September 18, 1996. On the basis of investigations at the CBU Drum Storage Area, there was no evidence to conclude that the site posed a threat to human health or the environment. The decision was made to remove Site 1 from further consideration in the IRP process.

2.3.2 Remedy Implementation

No remedial actions were implemented specifically for Site 1. However, a low-permeability cap was installed at the Area A Landfill, which encompasses Site 1. To ensure the quality of the IRA, quality control testing and inspection were completed during the remedial action in accordance with the Construction Quality Control (CQC) Plan and the Material Quality Assurance/Construction Quality Assurance (MQA/CQA) Plan. Two non-conformances were noted during quality control testing and inspection, but neither were regarded as significant enough to affect the performance of the cap system. The groundwater operable unit associated with this site is being investigated as part of the Area A Landfill Groundwater Monitoring Program and the Basewide Groundwater OU RI.

2.4 FIVE-YEAR REVIEW FINDINGS

2.4.1 Site Inspection

A site inspection conducted at Site 1 on April 10, 2001 included visual observations of the Area A Landfill cap that encompasses the former CBU Drum Storage Area. Conditions during the inspection were favorable, with mild temperatures and no precipitation. Representatives from the Navy, USEPA, CTDEP, and TtNUS participated in the inspection. During inspection of the cap, some minor cracks were noted in the asphalt, however, no damage was observed in the cap that would allow human or ecological receptors to come into contact with the soil of Site 1. Appendix A contains photographs taken of the site during the inspection.

The land use for the site has remained unchanged. NSB-NLON will continue to use the area for storage of equipment and materials.

2.4.2 Document and Analytical Data Review

The NFA Decision Document and documents prepared after the NFA Decision Document were reviewed for this five-year review. A summary of the reviewed documents is presented below.

A review of the NFA Decision Document indicates that a decision was made to remove Site 1 from further consideration in the IRP process. In accordance with CERCLA Section 120(h)(3), all necessary remedial

actions have been taken with respect to Site 1, and the USEPA and CTDEP signatures constitute concurrence with the determination.

A review of the Phase II RI Report indicates that the site was recommended for no further action. This recommendation was made because the potential source was removed, the results of the human health and ecological risk assessments indicated no need for further action, and the site was covered by the low-permeability cap installed for Site 2.

A review of the draft final Basewide Groundwater OU RI Report (TtNUS, 2001e) indicates that groundwater impacts associated with the Area A Landfill (Site 2) are minimal and localized. A quarterly Groundwater Monitoring Program is currently being implemented at Site 2. This monitoring program would also detect impacts from Site 1 which is located within the boundary of Site 2.

2.4.3 ARAR and Site-Specific Action Level Changes

No human health or ecological ARARs or site-specific action levels were identified in the NFA Decision Document for Site 1. No new human health or ecological ARARs have been promulgated that would call into question the protectiveness of the remedy. In addition, the site was capped during implementation of the Site 2 interim remedial action for the soil OU, effectively eliminating any direct exposure pathways to the soil at Site 1.

2.5 ASSESSMENT

The following conclusions support the determination that the remedy at Site 1 is expected to be protective of human health and the environment upon completion.

Question 1. Is the remedy functioning as intended by the decision documents?

- ***HASP/Contingency Plan:*** A quarterly Groundwater Monitoring Program is currently being implemented at Site 2. This will allow for monitoring of Site 1 because the Site 2 boundary incorporates Site 1. It was recommended that the program be continued to gather data to evaluate long-term trends in contaminant concentrations. Should groundwater data for Site 2 indicate the need for additional remedial action evaluation at some point in the future, a Feasibility Study (FS) would be performed at that time.

- ***Implementation of Institutional Controls and Other Measures:*** The Navy has an IR Site Use Restriction instruction in place as of October 2000 at NSB-NLON [SOPA (ADMIN) NLONINST

5090.18]. The policy restricts ground surface disturbance of soils or any subsurface disturbance of soils and/or groundwater at IR sites.

- ***Remedial Action Performance:*** The cap installed for Site 2 has been effective in limiting exposure and decreasing infiltration at Site 1. As discussed previously, some minor cracking has occurred in the asphalt but it does not affect the performance or integrity of the cover system.

- ***System Operations/O&M:*** This section is not applicable for Site 1. Discussion of cap O&M associated with Site 2 is provided in Section 3.0.

- ***Cost of Operations/O&M:*** Not applicable.

- ***Opportunities for Optimization:*** This five-year review does not identify a need for optimization at this time.

- ***Early Indicators of Potential Remedy Failure:*** No early indicators of potential remedy failure were noted during the review.

Question 2. Are the assumptions used at the time of the remedy selection still valid?

- ***Changes in Standards and To Be Considereds***: This five year review identified that CTDEP has issued additional Remedial Standard Regulations (Criteria for Additional Polluting Substances, April 30, 1999) since the NFA Decision Document was issued. In addition, USEPA Region 1 currently uses Region 9 PRGs for human health risk assessment purposes versus the Region 3 RBCs which were used at the time the NFA Decision Document was issued. Also, many of the ecological criteria have been updated since the NFA Decision Document was issued. However, the additional/updated criteria do not call into question the protectiveness of the selected remedy because the low-permeability cap installed over Sites 1 and 2 eliminated the exposure pathways to the Site 1 soil.

- ***Changes in Exposure Pathways:*** Since the low-permeability cap was installed for Site 2, there is currently no pathway of exposure for human or ecological receptors to come into contact with the soil related to Site 1. This assumption was discussed in the NFA Decision Document and therefore there are no changes in the site conditions that affect exposure pathways.

- ***Changes in Toxicity and Other Contaminant Characteristics:*** Since the NFA Decision Document was issued, beryllium has been reclassified from a carcinogen to a noncarcinogen for the oral and dermal routes of exposure. This change does not call into question the protectiveness of the remedy.

- ***Changes in Risk Assessment Methodologies:*** Changes in risk assessment methodologies since the time of the NFA Decision Document do not call into question the protectiveness of the remedy.

Question 3. Has any other information come to light that could call into question the protectiveness of the remedy?

No additional information has been identified that would call into question the protectiveness of the remedy.

2.6 DEFICIENCIES

No deficiencies were discovered during the five-year review for Site 1. Deficiencies in the cover system for Site 2 are discussed in Section 3.0.

2.7 RECOMMENDATIONS AND REQUIRED ACTIONS

Based on the results of the site inspection and review, one recommendation for Site 1 is that the IR Site Use Restriction Instruction should continue to be enforced. Another recommendation is that this site be eliminated from the Five-Year Review process in the future because a NFA Decision Document has been signed and the site has been eliminated from further consideration under the Navy's IRP.

2.8 PROTECTIVENESS STATEMENT

The remedy at Site 1 is protective of human health and the environment. The source of contamination has been removed. The engineered cap installed over the former site as part of the remedial action for Site 2 is effective in preventing infiltration of rainwater and preventing direct contact with soil. Results of the groundwater monitoring plan implemented for Site 2 do not indicate a groundwater problem.

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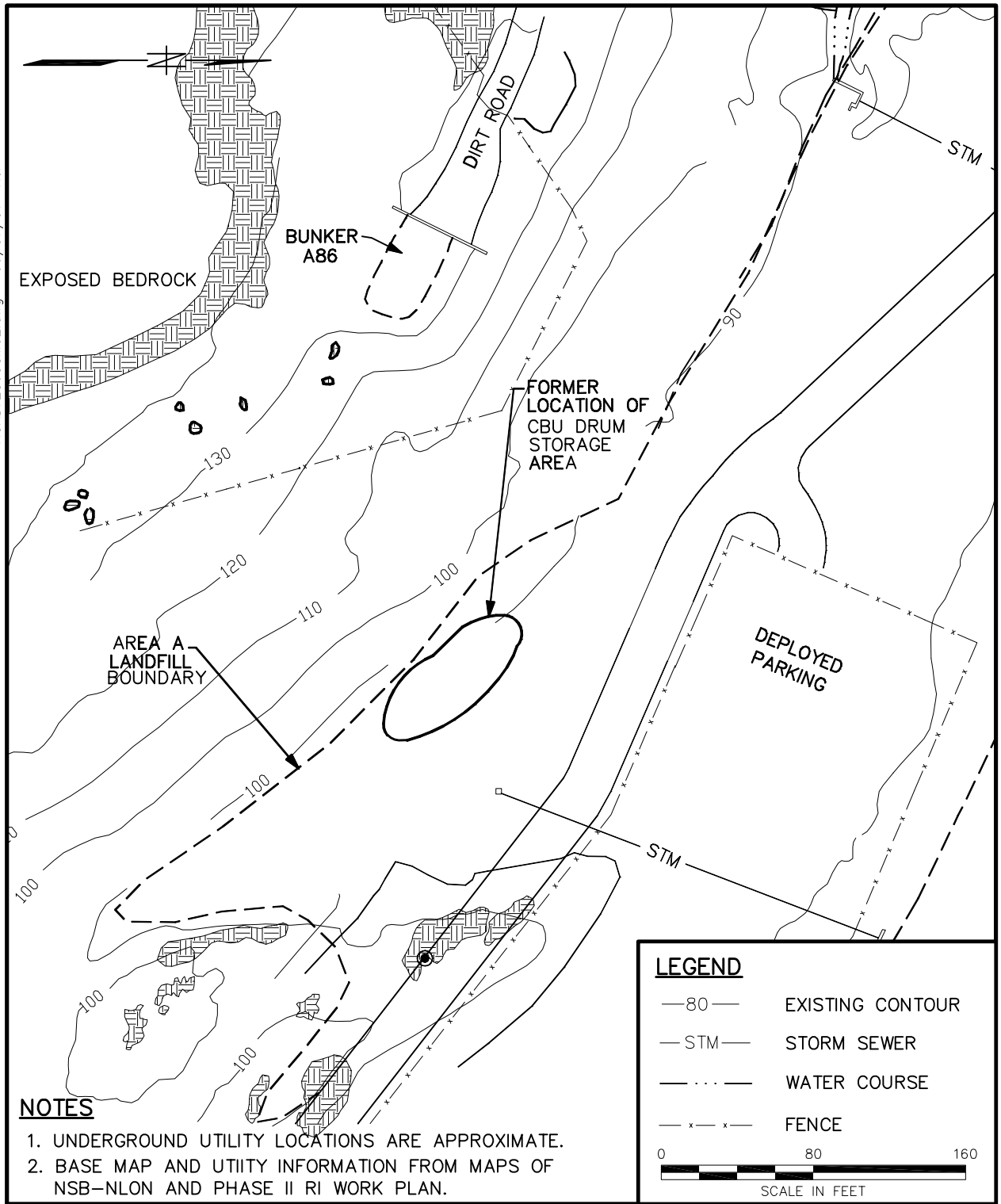

NOTES

1. UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE.
2. BASE MAP AND UTIITY INFORMATION FROM MAPS OF NSB–NLON AND PHASE II RI WORK PLAN.

DRAWN BY HJP DATE 5/2/01	Tetra Tech NUS, Inc.	CONTRACT NO. 2863	OWNER NO. 0816
CHECKED BY DATE	GENERAL SITE MAP SITE 1 – CBU DRUM STORAGE AREA NSB–NLON, GROTON, CONNECTICUT	APPROVED BY DATE	
COST/SCHED–AREA		APPROVED BY DATE	
SCALE AS NOTED		DRAWING NO. FIGURE 2–1	REV. 0

FORM CADD NO. TtNUS_AV.DWG – REV 0 – 1/22/98

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